

CLAIMS

1. A process for manufacturing a plated product comprising a support part in steel and an anticorrosion metallic coating, said process comprising at least one  
5 brazing operation under controlled atmosphere, utilizing at least one brazing material, in such a way as to establish a mechanical bond between at least one defined part of the support and at least one defined part of the coating.

10 2. The manufacturing process of Claim 1, wherein the brazing operation comprises bringing said defined parts closer together in such a way as to obtain a space D less than 0.1 mm.

15 3. The manufacturing process of Claim 1, wherein the brazing operation is effected under vacuum.

4. The manufacturing process of Claim 3, wherein the residual pressure of said vacuum is less than  $10^{-4}$  mbar.

20 5. The manufacturing process of Claim 3, wherein said brazing operation comprises:

- interposing at least one brazing material between the steel support part and the anticorrosion coating, in such a way as to form an initial assembly ;
- optionally, applying a plating pressure on said  
25 initial assembly ;
- introducing the initial assembly into a vacuum chamber provided with means of heating ;
- formation of a vacuum in said chamber;
- heating of said assembly up to a temperature at least  
30 equal to the brazing temperature of said brazing material.

6. The manufacturing process of Claim 1, wherein the brazing operation is effected under inert gas.

7. The manufacturing process of Claim 6, wherein the inert gas is selected from the group comprising rare gases, nitrogen and mixtures thereof.

8. The manufacturing process of Claim 6, wherein said brazing operation comprises :

- interposing at least one brazing material between the steel support part and the anticorrosion coating, in such a way as to form an initial assembly ;
- possibly, applying a plating pressure on said initial assembly ;
- introducing the initial assembly into a controlled-atmosphere chamber provided with means of heating ;
- replacing the atmosphere in said chamber with an inert gas ;
- heating of said assembly up to a temperature at least equal to the brazing temperature of said brazing material.

9. The manufacturing process of Claim 1, further comprising at least one treatment selected from the group comprising the chemical treatments, the electrochemical treatments, the physico-chemical treatments, the mechanical treatments and the combinations thereof.

10. The manufacturing process of Claim 1, further comprising depositing at least one layer capable of improving the tying of the brazing material.

11. The manufacturing process of Claim 10, wherein said layer is metallic.

12. The manufacturing process of Claim 10, wherein said depositing is effected by chemical means, electrolytic means or in vapor phase.

13. The manufacturing process of Claim 1, wherein the thickness of said coating is less than 1 mm.

14. The manufacturing process of Claim 1, wherein the thickness of said coating is less than 0.5 mm.

5        15. The manufacturing process of Claim 1, wherein said coating is in tantalum or an alloy of tantalum.

16. The manufacturing process of Claim 15, wherein the brazing material is a material containing nickel and boron.

10        17. The manufacturing process of Claim 15, wherein the brazing material is a silver-based material containing lithium, copper, aluminium, zinc and/or tin.

18. The manufacturing process of Claim 1, wherein said coating is in titanium or an alloy of titanium.

15        19. The manufacturing process of Claim 18, wherein the brazing material is an alloy with a titanium base.

20. The manufacturing process of Claim 18, wherein the brazing material is a silver-based material containing lithium, copper, aluminium, zinc and/or tin.

20        21. The manufacturing process of Claim 1, wherein said coating is in zirconium or an alloy of zirconium.

22. The manufacturing process of Claim 21, wherein the brazing material is an alloy with a base of zirconium, copper or nickel.

25        23. The manufacturing process of Claim 21, wherein the brazing material is a silver-based material containing lithium, copper, aluminium, zinc and/or tin.

24. The manufacturing process of Claim 1, wherein the brazing material comes in the form of powder, a  
30 sheet or a mesh.

25. The manufacturing process of Claim 1, wherein said steel is a chromium steel.

26. The manufacturing process of Claim 1, wherein the difference between the thermal expansion coefficient of said steel and the thermal expansion coefficient of said anticorrosion coating is less than 20%.

27. The manufacturing process of Claim 1, wherein said support part comes in the form of a plate or sheet.

28. The manufacturing process of Claim 1, wherein said coating comes in the form of a plate or sheet.

29. The manufacturing process of any one of Claims 1 to 28, wherein said plated product is an assembly part or an element of a chemical device.